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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/916,490	07/27/2001	Hung-Ju Lee	SNY-P4516	9213
24337	7590	10/13/2005	EXAMINER	
MILLER PATENT SERVICES 2500 DOCKERY LANE RALEIGH, NC 27606			AN, SHAWN S	
			ART UNIT	PAPER NUMBER
			2613	

DATE MAILED: 10/13/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

<b>Office Action Summary</b>	<b>Application No.</b> 09/916,490	<b>Applicant(s)</b> LEE, HUNG-JU	
	<b>Examiner</b> Shawn S. An	<b>Art Unit</b> 2613	

**-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --**

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 01 August 2005.
- 2a) ☐ This action is **FINAL**.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-32 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 10-16 and 32 is/are allowed.
- 6) ☒ Claim(s) 1-9 and 17-31 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All    b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)  | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)                                   | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)             |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)<br>Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____  |

## **DETAILED ACTION**

### ***Response to Amendment***

1. As per Applicant's instructions as filed on 8/01/05, claims 17, 23, and 29 have been amended.

### ***Response to Remarks***

2. Applicant's argument with respect to currently pending claims have been carefully reviewed but are moot in view of the new ground(s) of rejection.

### ***Claim Rejections - 35 USC § 103***

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

4. Claims 1-6 and 29-31 are rejected under 35 U.S.C. 103(a) as being unpatentable over Morel (6,498,814 B1) in view of Liu et al (6,904,094 B1).

**Regarding claims 1, 4, and 29**, Morel discloses MPEG transcoder having drift compensation (Fig. 1, see DCL), and a method of computing a drift reduction block, comprising:

an inverse quantizer (Fig. 1, IQ<sub>2</sub>) for inverse quantizing at least one coefficient to produce an inverse quantized coefficient block.

Morel does not particularly disclose remainder of the claimed limitations.

However, Liu et al discloses the MPEG transcoder (Fig. 3(b)) having motion compensation, and a method of computing a reduction block, comprising:

means for processing a block of DCT coefficients by dropping at least one coefficient in the block (Fig. 6, 618; col. 3, lines 9-32);

means for forming a dropped coefficient block containing the at least one coefficient (col. 8, lines 51-59);

an inverse quantizer (Fig. 4, 420) for inverse quantizing at least one coefficient to produce an inverse quantized dropped coefficient block; and

an inverse DCT (Fig. 3(b), 384) for inversely discrete cosine transforming the inverse quantized dropped coefficient block to produce the drift reduction block.

Therefore, it would have been obvious to a person of ordinary skill in the relevant art employing a transcoder having drift compensation as taught by Morel to incorporate all of the concepts as taught by Liu et al for inverse quantizing at least one coefficient to produce an inverse quantized dropped coefficient block, and inversely discrete cosine transforming the inverse quantized dropped coefficient block for producing the drift reduction block, thereby increasing time efficiency and also increasing an image quality due to the drift reduction/compensation.

**Regarding claims 2-3, 5-6, and 30-31**, Liu et al discloses dropping a plurality of coefficients in the block containing high frequency coefficients (col. 7, lines 35-40).

5. Claims 7-9 are rejected under 35 U.S.C. 103(a) as being unpatentable over Morel and Liu et al as applied to claim 4 above, and further in view of Le Clerc (6,307,888 B1).

**Regarding claim 7**, the combination of Morel and Liu et al does not particularly disclose mapping a block of video coefficients to a corresponding block of coefficients in the drift reduction frame using a motion vector.

However, Le Clerc teaches mapping blocks by their associated motion vector (col. 6, lines 20-21).

Therefore, it would have been obvious to a person of ordinary skill in the relevant art employing a method of computing a drift reduction block as taught by Morel to incorporate the well known concept as taught by Le Clerc so as to map the block of video coefficients to the corresponding block of coefficients in the drift reduction frame using the motion vector as an efficient way to drift compensate the current frame, thereby at least estimating the noise level in a video sequence.

**Regarding claim 8**, Liu et al discloses performing DCT (370) to the block of coefficients in the drift reduction frame.

**Regarding claim 9**, Liu et al discloses performing Q (375) to the DCT transformed block of coefficients in the drift reduction frame.

6. Claims 17-18, 20-24, and 26-28 are rejected under 35 U.S.C. 103(a) as being unpatentable over Morel (6,498,814 B1) in view of Liu et al (6,904,094 B1) and Le Clerc (6,307,888 B1).

**Regarding claims 17 and 23**, Morel discloses an MPEG transcoder (Fig. 2) and a method of drift compensating a current frame having a motion vector (Fig. 3; col. 5, lines 54-66), comprising:

- a decoder for decoding pixels to form a drift reference frame (Fig. 2, IQ2); and
- a drift compensator for compensating the block from the current frame using the block in the drift reference frame (Fig. 2, see DCL).

Morel does not particularly disclose means for dropping pixels from a reference frame of video, and after dropping pixels decoding the dropped pixels to form a reduced drift reference frame, and mapping means for mapping a block of video from the current frame to a block in the drift reference frame.

However, Liu et al discloses the MPEG transcoder (Fig. 3(b)) having motion compensation, and a method of computing a reduction block, comprising:

- means for dropping pixels from a reference frame of video (Fig. 6, 618; col. 3, lines 9-32); and

- after dropping pixels, decoding the dropped pixels to form a reduced reference frame (Fig. 3(b), 315 and/or 382 and/or 384).

Furthermore, Le Clerc teaches mapping blocks by their associated motion vector (col. 6, lines 20-21).

Therefore, it would have been obvious to a person of ordinary skill in the relevant art employing an apparatus/method of drift compensating a current frame having a motion vector as taught by Morel to incorporate the concepts as taught by Liu et al and Le Clerc for decoding the dropped pixels to form a reduced drift reference frame and for

mapping a block of video from the current frame to a block in the drift reference frame as an efficient way to drift compensate the current frame, thereby at least estimating the noise level in a video sequence and increasing time efficiency and also increasing an image quality due to the drift reduction/compensation.

**Regarding claims 18 and 24**, Morel discloses the current frame having a plurality of motion vectors, and the drift compensator compensating for each of the motion vectors (col. 5, lines 54-66).

Furthermore, Le Clerc teaches the mapping as discussed above.

Therefore, it would have been obvious to a person of ordinary skill in the relevant art to recognize the mapping being carried out for each of the motion vectors.

**Regarding claims 19 and 25**, Morel discloses an inverse quantizer (Fig. 1, IQ<sub>2</sub>) for inverse quantizing at least one coefficient to produce an inverse quantized coefficient block.

Furthermore, Liu et al teaches:

forming a dropped coefficient block containing the at least one coefficient (col. 8, lines 51-59);

an inverse quantizer (Fig. 3(a), 320) for inverse quantizing at least one coefficient to produce an inverse quantized dropped coefficient block; and

an inverse DCT (325) for inversely discrete cosine transforming the inverse quantized dropped coefficient block to produce a reduced block.

Therefore, it would have been obvious to a person of skill in the relevant art employing an apparatus/method of drift compensating a current frame as taught by Morel to incorporate the concepts as taught by Liu et al so as to produce a drift reduction block as an efficient way to drift compensate the current frame, thereby at least estimating the noise level in a video sequence and increasing time efficiency and also increasing an image quality due to the drift reduction/compensation.

**Regarding claims 20-21 and 26-27**, Liu et al discloses dropping a plurality of coefficients in the block containing high frequency coefficients (col. 7, lines 35-40).

**Regarding claims 22 and 28**, Morel discloses compensating by adding the block of video from the current frame to the block in the drift reference frame (Fig. 2, see S1).

***Allowable Subject Matter***

7. Claims 10-16 and 32 are allowed.

Claims 10-15 and 32 include novel features (all of the limitations combined as a whole, emphasized), wherein the art of records fail to anticipate or make obvious the novel features.

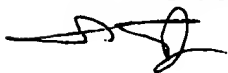
Claim 16 is allowed as having at least all of the claimed limitations as set forth in independent claim 10.

***Conclusion***

8. Any inquiry concerning this communication or earlier communications from the Examiner should be directed to *Shawn S. An* whose telephone number is 571-272-7324.

9. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300. Please note the new fax number.

10. Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



**SHAWN AN  
PRIMARY EXAMINER**

10/11/05